



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202 - 2733**

**June 5, 2015**

**Office of the Regional Administrator**

Colonel Richard A. Pratt  
Commander and District Engineer  
U.S. Army Corps of Engineers  
Tulsa District Regulatory Office  
1645 S 101 E Avenue  
Tulsa, Oklahoma 74128-4609

Dear Colonel Pratt:

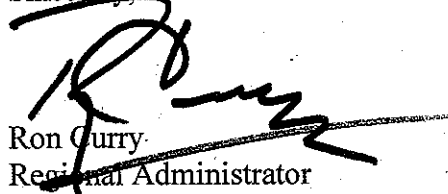
The U.S. Environmental Protection Agency reviewed the Draft Environmental Impact Statement regarding the proposed Lower Bois d'Arc Creek Reservoir Clean Water Act Section 404 Permit Application. Our review and comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality Regulations (40 C.F.R. Parts 1500-1508), Section 309 of the Clean Air Act, and Section 404 of the Clean Water Act.

The EPA's review identified significant inadequacies in the analysis and information provided in the Draft EIS. Moreover, we are concerned that the NEPA analysis does not provide sufficient information regarding the nature and extent of direct, indirect and cumulative adverse environmental effects associated with the proposed reservoir. As currently proposed, the project would eliminate over 5,800 acres of wetlands (including over 4,600 acres of forested wetlands) and 120 miles of streams. We also have concerns regarding the extent and the technical and ecological feasibility of proposed mitigation measures. Based on the document submitted as part of the public record, we have rated the Draft EIS as "3-Inadequate". As mentioned in the enclosed "Summary of Rating Definitions," the EIS should be revised and made available for public comment in a supplemental or revised Draft EIS.

In meetings with the Corps of Engineers during the review of this document, the EPA acknowledges the verbal commitment the COE has made to developing plans to resolve major issues involving alternative analyses, functional analysis of the impacted wetlands and streams, and mitigation. The EPA appreciates the Tulsa District's COE efforts to address the environmental concerns and informational inadequacies within the Draft EIS. We look forward to working with you and the applicant to identify a feasible and sustainable approach to providing needed water supplies. The EPA has enclosed detailed comments that clarify our concerns.

If you have any questions or concerns, please do not hesitate to contact me at (214) 665-2100, or your staff may contact Mr. Keith Hayden, National Environmental Policy Act Section Chief, at (214) 665-2133, or via email at [hayden.keith@epa.gov](mailto:hayden.keith@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Ron Curry", is written over the printed name and title.

Ron Curry  
Regional Administrator

**DETAILED COMMENTS ON THE  
U. S. ARMY CORPS OF ENGINEERS  
TULSA DISTRICT  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
FOR THE LOWER BOIS D'ARC CREEK RESERVOIR**

**Project Background**

The Tulsa District COE received an application for a Clean Water Act (CWA) Section 404 Permit from the North Texas Municipal Water District (NTMWD) to discharge dredged and fill material into Bois d' Arc Creek, in the Red River watershed, approximately 15 miles northeast of the City of Bonham, Fannin County, Texas. The project entails construction of a dam to impound the flow of the creek to provide a new 16,641-acre water supply reservoir – the Lower Bois D'Arc Creek Reservoir. NTMWD has requested the right to impound up to 367,609 acre-feet of water and divert up to 175,000 acre-feet/year, with an estimated firm yield of 126,200 acre-feet of water per year. State population projections show the population of the NTMWD service area increasing from 1.6 million to 3.3 million by 2060. The total “footprint” of the proposed project site is 17,068 acres. The purpose of the proposed project is to impound the waters of Bois d'Arc Creek and its tributaries to create a new 16,641-acre water supply reservoir for the NTMWD. The Lower Bois d'Arc Creek Reservoir dam would be approximately 10,400 feet in length and would have a maximum height of approximately 90 feet. Raw water from the reservoir would be transported by approximately 35 miles of new pipeline, 90-96 inches in diameter, to a proposed new terminal storage reservoir and water treatment plant just west of the City of Leonard, TX. The proposed project would impact approximately 120 acres (49.8 linear miles) of existing perennial streams, 99 acres (73.5 miles) of intermittent streams, 87 acres of open water, 4,602 acres of forested wetlands, 1,223 acres of herbaceous wetlands, and 49 acres of shrub wetlands.

The Lower Bois d'Arc Creek Reservoir project was first brought to EPA's attention in October 2008, in connection with EPA's review of the public notice by the Tulsa District COE of the CWA Section 404 permit application. EPA provided comments in response to the Tulsa District COE's notice on December 9, 2008<sup>1</sup>. In the comments, EPA detailed its concerns with the overall size and uniqueness of the impacted aquatic sites, the lack of alternatives proposed to meet the purpose and need of water supply, the downplaying of wetland functions lost to the proposed project, and the lack of a satisfactory mitigation plan. EPA recommended that an EIS be prepared and that the permit be denied. EPA followed-up with a letter from the Regional Administrator, dated January 5, 2009<sup>2</sup>, reiterating the Agency's concerns with the project. By letter dated December 15, 2010<sup>3</sup> EPA specifically raised concerns with the use of the Habitat Evaluation Procedure (HEP) as the sole determinant of wetland and other Waters of the U.S. (WUS) impacts. The Tulsa District COE responded on February 17, 2011<sup>4</sup> that, due to resource

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<sup>1</sup> The December 9, 2008 letter is in Appendix B.

<sup>2</sup> The January 5, 2009 letter is in Appendix B.

<sup>3</sup> The December 15, 2010 letter is in Appendix B.

<sup>4</sup> The February 17, 2011 letter is in Appendix B.

and time constraints they were not interested in partnering on the development of a suitable assessment method. At the time, it was anticipated that a Draft EIS would be available in the summer of 2011. EPA was designated a cooperating agency on May 4, 2011<sup>5</sup>. On August 1, 2014, EPA requested to view a Preliminary Draft of the EIS due to the size and nature of the impacts. EPA received a copy of the Preliminary Draft EIS on August 8, 2014, and submitted substantial comments on October 2, 2014. In its comments, EPA pointed out that the Preliminary Draft EIS failed to address the majority of the concerns stated in the EPA letters sent from 2008-2014 referenced above.

## **Purpose and Need**

As described, the purpose of the project is to impound the water of Bois d'Arc Creek and its tributaries to create a new water supply for NTMWD customers. The CWA Section 404 application seeks a permit that would allow for the construction of a dam and reservoir for water storage on Bois d'Arc Creek, as well as new water treatment with associated infrastructure at Leonard, Texas.

The principal document used by the applicant to support a need for the applicant's desired project is the 2012 Texas State Water Plan (SWP). However, Council on Environmental Quality (CEQ) Regulations at 40 CFR 1506.5, which relate to preparation of an EIS, states, "[T]he agency shall independently evaluate the information submitted and shall be responsible for its accuracy."

The Texas SWP is not a project specific analysis, but rather a generalized planning tool for public awareness related to long range planning efforts to seek adequate water. It lacks the site specific, up to date, and detailed analysis needed to fully evaluate a project for factual needs. It does not include an array of alternatives, or combination of alternatives, specific to a single action.

## **Alternatives Analysis**

The "heart" of an EIS is the consideration of a reasonable range of project alternatives, providing a clear basis for choice among options by the decision-maker and the public. In addition to these NEPA requirements, CWA Section 404(b)(1) Guidelines (Guidelines) provide that only the least environmentally damaging practicable alternative may be permitted. Despite these requirements, the Draft EIS does not study in detail a range of alternatives other than the project as proposed and the "no-action" alternative.

We are concerned that this limited analysis does not recognize that there are likely additional practicable alternatives that can meet the stated project purpose while more effectively avoiding and minimizing anticipated significant adverse environmental effects. For example, several alternatives which are briefly discussed in the Draft EIS that either individually, in combination, or with appropriate adjustments, could potentially meet the applicant's projected water supply needs.

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<sup>5</sup> The May 4, 2011 letter is in Appendix B.

Particularly relevant to the discussion of alternatives, we note that Table 1-6 (Water management strategies for NTMWD recommended by Region C Water Planning Group) indicates that planned supplies from the Lower Bois d'Arc Creek Reservoir in order to meet projected area water demand through 2060 are all well below the estimated firm yield of the proposed project. In that light, it may be reasonable to consider a combination of other water management strategies as alternative ways to meet the increasing water demands of the project area. EPA recommends that a revised Draft EIS consider a range of practicable alternatives and evaluate the environmental consequences to meet the requirements of NEPA, and to ensure that the proposed project represents the least environmentally damaging practicable alternative, as required by the Guidelines.

Chapter 2 of the Draft EIS discusses costs, amount of water supplied by an alternative, impacts to WUS, vegetation, and logistical concerns with bringing a water supply online. The initial analysis did not consider impacts to cultural, historical, or archeological resources, threatened and endangered species, noise, or environmental justice populations, which were issues gathered from scoping, public comment, and internal discussion, and identified as "key issues" in Section 1.7.1 of the Draft EIS. EPA recommends that in addition to analyzing more alternatives in detail, that a broader range of criteria be used to assess the validity of each potential alternative.

### Conservation

EPA believes requests for new reservoirs should include a detailed description regarding efforts to maximize existing water supply and minimize current water demand. For example, on the supply side, existing reservoirs can be dredged to eliminate water displacing sediments. While the Draft EIS discusses proposed dredging of existing lakes (e.g., Lake Lavon and Lake Chapman), it is not clear from the Draft EIS if the applicant has analyzed all potential engineering opportunities to meet supply with additional dredging in other lakes. In addition, existing reservoirs can be deepened beyond current levels. Deepening of the current reservoirs would provide increased volume to the reservoir without increasing evaporative surface area. Direct potable reuse has also proven to be a viable source water supply alternative<sup>6</sup> and should be considered by the applicant along with new reservoirs. On the demand side, public water systems that are pulling from existing reservoirs should demonstrate active leak detection and repair programs, achieving a water loss of less than 10 percent<sup>7</sup>. Additionally, these same public water systems should demonstrate active and effective water conservation programs. The Draft EIS should discuss the specifics of the applicant's water use Conservation Plan, and whether the plan contains some of the elements discussed above.

Of particular concern is the potential that current contracting mechanisms of the NTMWD may inadvertently be discouraging its customer public water systems from achieving water conservation goals. It is our understanding that under the current contract, purchasing utilities must use a certain amount of water each year or reimburse the NTMWD for the unused

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<sup>6</sup> Schroeder, E.; Tchobanoglous, G.; Leverenz, H.; Asano, T. 2012. Direct Potable Reuse: Benefits for Public Water Supplies, Agriculture, the Environment, and Energy Conservation. National Water Research Institute White Paper NWRI-2012-01. <http://nwri-usa.org/documents/NWRIWhitePaperDPRBenefitsJan2012.pdf>

<sup>7</sup> U.S. Environmental Protection Agency. 2010. Control and Mitigation of Drinking Water Losses in Distribution Systems, November 2010. USEPA, Office of Water. EPA 816-R-10-019.

portion. For example, if a City purchased a maximum of 100 acre-feet of water in a particular year, we understand that they would be locked in to paying for that amount of water each year, even when lesser amounts of water are taken by the City. Under this scenario, purchasing public water systems that must continue paying for maximum usage years may not be incentivized to enforce conservation policies, where customers are saving water but paying less to the utility. We recommend that the NTMWD evaluate its policies to ensure that the policies are not inadvertently discouraging water conservation.

## **Assessment Methods**

### Jurisdictional Determinations (JD)

The Draft EIS should disclose that an approved Jurisdictional Determination (JD) was not performed by the Tulsa District COE. The Army Regulatory Guidance Letter (RGL) 2008-02 states that preliminary JDs are recommended only for General Permits, not for Individual Permits, and especially not for large complex projects such as this one. EPA recommends that an approved JD be made by the Tulsa District COE to ensure a factual determination can be made on the extent of impacts posed by this project.

### Rapid Geomorphic Assessment (RGA)

EPA requested additional information regarding the RGA developed and conducted by the applicant's consultant by letter dated August 1, 2014<sup>8</sup>. The applicant utilized four independent stream assessment methods, at least two of which are not known to have been previously utilized in the state of Texas. EPA requests that the Tulsa District COE provide independent documentation as to the suitability of the methods for use in the project area, what measures to calibrate the methods to the area have been conducted, and copies of peer reviews of the methods made by outside and independent expertise on the subject. The Tulsa District COE acceptance of the RGA method appears inconsistent given the Tulsa District COE had previously rejected EPA's recommendation to utilize the Hydrogeomorphic Approach to the Functional Assessment of Forested Wetlands in Alluvial Valleys of East Texas (HGM).

### Habitat Evaluation Procedure (HEP)

EPA is concerned that the Draft EIS relies solely on the Habitat Evaluation Procedure (HEP) to assess the potential impacts to aquatic resources. HEP provides an analysis of habitat quality for pre-selected and project specific wildlife species. As such, HEP does not measure the full suite of aquatic functions provided the aquatic resources impacted by the proposed project. The riparian woodland/bottomland hardwood cover type in the proposed project area includes the predominantly deciduous forests of riparian zones and wetlands, and is associated with the floodplains of Lower Bois d'Arc Creek. These wetlands improve water quality by removing and retaining pollutants, temporarily storing surface water, maintaining stream flows, and supporting aquatic food webs by processing significant amounts of organic carbon. HEP does not evaluate these other important functions that would be affected by the project.

In 2005, the COE Ecosystem Management and Restoration Research Program developed "A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Forested Wetlands in the West Gulf Coastal Plain Region of Arkansas," which was

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<sup>8</sup> The August 1, 2014 letter is in Appendix B.

published by the COE Engineer Research and Development Center (ERDC). In 2010 ERDC published “A Regional Guidebook for Applying the Hydrogeomorphic Approach to the Functional Assessment of Forested Wetlands in Alluvial Valleys of East Texas.” These are two methodologies used to assess wetland functions in forested wetlands similar to wetlands found in the project area. The reference domain for each of these HGM Guidebooks defines the area in which sampling was done specific to that model. However, that does not limit the area for which they can be used. For example, the East Texas Guidebook specifically references EPA Level IV Ecoregion 35b, (Floodplains and Low Terraces) which would be applicable to the project area. In an effort to ensure that the East Texas Guidebook was valid for use in this project area, EPA Office of Wetlands, Oceans and Watersheds (OWOW) funded a study to test and calibrate the various relevant metrics in the sampling method<sup>9</sup>. This study was performed by the Guidebook’s principal author, Dr. Hans Williams of Stephen F. Austin University, who was recommended to EPA by ERDC expert Dr. Charles Klimas. Dr. Williams work concluded that HGM was suitable for uses in the project area with only a small amount of metric calibration necessary, which would take little time and resources to develop. EPA notified the Tulsa District COE of our intent to develop the study, and our dissatisfaction with the use of the HEP procedure to determine wetland function, in a letter dated December 15, 2010. The District responded by letter dated February 17, 2011, that “It would not be appropriate to the investment of agency time and resources, the applicant’s consulting resources, and the accumulation of baseline data on the project site and mitigation site, to change assessment approaches at this time.” EPA provided the results of the study to Tulsa District COE, by letter, August 29, 2011<sup>10</sup>. The EPA requests that the full suite of aquatic functions potentially affected by the project be assessed and disclosed in the EIS.

## **Environmental Consequences**

### Impacts to Aquatic Resources

We are concerned over potential impacts to the high quality aquatic ecosystems, as well as the analysis of these potential impacts, and the proposed mitigation measures. The Bois d’Arc Creek flows along the boundary of two Ecoregions, the Post Oak Savannah and the Blackland Prairies, and has unique attributes from both Ecoregions. The Texas Parks and Wildlife Department classified the entirety of Bois d’Arc Creek as possessing significant biological and hydrologic functions in their agency recommendations for water planning data for Region C. The U.S. Fish and Wildlife Service (USFWS)<sup>11</sup> identified acreage adjacent to Bois d’Arc Creek as a Priority Hardwood Forest due to its high resource value.

The proposed reservoir would be expected to alter the natural habitats of the site. It would reduce the amount of forested wetland habitat in the watershed. The proposed project may affect ecological processes both upstream and downstream of the dam and have both short and long term effects on wildlife habitat. Impacts may occur within the proposed impoundment

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<sup>9</sup> Dans, Darinda; Williams, Hans. 2011. Field Testing East Texas HGM Riverine Wetland Functional Assessment Guidebook: Lower Bois d’ Arc Creek Impoundment Project. Prepared for: Wetlands Division, Office of Wetlands, Oceans, and Watersheds, U.S. Environmental Protection Agency, Washington D.C.

<sup>10</sup> The August 29, 2011 letter is in Appendix B.

<sup>11</sup> U.S. Fish and Wildlife Service. 1985. Texas Bottomland Hardwood Preservation Program. Department of the Interior Final Concept Plan. Albuquerque, New Mexico.

area, as a result of removing the vegetation by site clearing and flooding; reducing the diversity and interspersed of habitats; reducing nutrient enrichment of the floodplain; and preventing animal movement along the riparian corridors. The food, cover, and reproductive sites for the species expected at the site could be affected. Animals unable to escape the area would be directly impacted. Mobile species would attempt to relocate in adjacent areas. It is not known if the adjacent areas have the capacity to accept the mobile species. Breeding, feeding, denning, roosting, and spawning areas in the vegetation removed for the project may be serving a variety of terrestrial, arboreal and aquatic wildlife. The linear riparian habitats serve as corridors for resident and migratory animals. The proposed project may extirpate amphibian and reptile species. Fishery populations would be altered. The dam would reduce downstream flows to water bodies with aquatic life. The proposed project is expected to deplete aquatic and terrestrial invertebrate fauna. Due to expected magnitude and frequency of drawdowns in the reservoir, aquatic and emergent plant communities may not develop in shallow areas of the reservoir, reducing food supplies provided by invertebrates for higher level consumers.

#### Consequences of No-action Alternative

The Draft EIS states: "If the reservoir were not to be built, then those lands within the proposed reservoir footprint could once again be subject to timber harvest, clearing of wetlands, and construction of new stock ponds, though not by NTMWD." This statement may be misleading because it does not assume the current use of the land will continue. The current use of the land is for agriculture, bottomland hardwood habitat, and upland habitat. As stated, it assumes adverse effects will result from not pursuing the preferred alternative.

#### Evaporation

There may be a significant difference between evaporation from the no action alternative, which would leave the creek in its natural and often shaded state, and the proposed large open surface on more than 17,000 acres of the proposed reservoir. The difference in water supply required to offset this loss should be discussed in the Draft EIS.

#### Habitat Fragmentation

The continuous Bois d'Arc Creek corridor would be bisected by the 2-mile long proposed dam and reduced from 68.1 miles to a length of 30.1 miles. Please discuss impacts from the dam to aquatic and terrestrial species that could be impacted by the fragmenting of the wildlife corridor.

#### Carbon Storage and Sequestration

The carbon storage and sequestration function of the forested riverine wetland that would be lost to the permanent inundation by the proposed reservoir has not been addressed. The green ash tree, a dominant tree at the proposed reservoir site, is attributed with a high level of carbon sequestration and storage. Carbon sequestration would be eliminated because of the dam and elimination of regenerating biomass when the reservoir is filled. The Draft EIS should discuss the impacts of removing this carbon sink from the environment and replacing it with a reservoir.

## **Mitigation**

### Fringe Wetland Creation

EPA has concerns with the proposal for development of fringe wetlands within the reservoir, and the mitigation credit. The Draft EIS should discuss appropriate timelines for establishment and performance standards for mitigation credits. It would be expected to take decades to establish fringe wetlands due to the water level fluctuations that are expected in the reservoir. Wetland establishment should take place before or commensurate with the impacts from any reservoir construction. Secondly, fringe wetlands are not the type of wetlands that would be impacted and would be considered “out of kind” if offered to compensate for this proposal.

### Stream Mitigation Amounts

The proposed mitigation for stream impacts involves some preservation and limited enhancement in the way of removing cattle and riparian plantings. Project impacts to streams total 123.3 miles. Preservation and enhancement is proposed for 76.7 miles, leaving an unmitigated balance of 46.6 miles. Without determining the validity of the enhancement and preservation uplift, there is a significant deficit in the impacts to streams which would result in unacceptable impacts to WUS. The applicant should utilize an acceptable stream assessment method to determine the extent of impacts. Any remaining unavoidable impacts to streams should be evaluated and mitigated.

### Mitigation Monitoring

The draft Mitigation Report states that if no degradation of the aquatic community from baseline metrics occurs, monitoring will end after year ten. Please clarify what will occur if a marked degradation occurs in the aquatic community. The Draft EIS should describe what adaptive management process will be in place to remediate problems and at what point action will be taken. The Draft EIS does not indicate who will be the conservator or manager of these processes.

### Biological Sampling

In addition to the planned biological collections described in Chapter 9 of the Mitigation Plan, EPA suggests the completion of a habitat assessment consistent with Texas Commission on Environmental Quality’s (TCEQ) *Surface Water Quality Monitoring Procedures, Volume 2, Chapter 9; Methods for Collecting and Analyzing Biological Assemblage and Habitat Data*. Habitat assessments will allow investigators to measure changes in habitat over time due to altered flow regimes and holistically evaluate the health of biological assemblages. EPA also recommends that a comprehensive habitat assessment occur in the downstream segment prior to dam construction to facilitate a good baseline. Also, clarification is needed on how biological data would be assessed for future collections of macroinvertebrate and fish data. According to TCEQ procedures, two or more Index of Biological Integrity (IBI) scores for one assemblage are averaged and multiplied by a coefficient of variation before being compared to the designated benchmark<sup>12</sup>. EPA recommends that the ecological improvement (lift) be demonstrated from

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<sup>12</sup> Texas Commission on Environmental Quality. 2012. 2012 Guidance for Assessing and Reporting Surface Water Quality in Texas. Prepared by: Surface Water Quality Monitoring Program, Monitoring and Assessment Section,

baseline conditions at the mitigation site and be compared to the baseline at the impact site to demonstrate overall functional lift.

#### Downstream Flow to the Mitigation Site

The Mitigation Plan (pages 50-51, Appendix E of the Draft EIS) recognizes hydrology as the foundation for the successful establishment and maintenance of the future proposed downstream wetland mitigation area. The Mitigation Plan indicates the existing rainfall runoff from the drainage area (e.g., flows in creek, overland runoff flow) is a primary water source for these future downstream wetlands. The Lower Bois d'Arc Creek Reservoir project, however, will significantly reduce this water source. This means the proposed mitigation site will have its water supply significantly reduced from existing levels. The Draft EIS does not discuss the potential adverse effect to the establishment and maintenance of the proposed Mitigation site from the reduced flows resulting from the project.

#### Stream Mitigation

EPA recommends that reference "reaches" (i.e., areas for comparison) be identified prior to commencement of a conceptual stream restoration plan for the proposed Mitigation site. The site specific plan and reference reaches should be provided to the Cooperating Agencies for review and comment prior to implementation. The stream restoration should be based on reference reaches that exhibit similar geomorphic and habitat characteristics such as channel length, sinuosity gradient, bottom substrate type, pool/riffle ratio, streamside vegetation, overhead canopy vegetation, and channel width/depth characteristics.

EPA is concerned that replacing the inundated stream type with another stream type, which will be created at the Mitigation site, will not properly mitigate the full suite of functions and services provided by the impacted stream. Please include more information in the Mitigation Plan and Draft EIS that describes how the streams created at the mitigation site will mimic stream functions lost to inundation.

#### Conservation Easement

Site selection plays an integral role in determining the success of mitigation. The Applicant needs to clearly demonstrate that the Mitigation site (Riverby Ranch) will not be detrimentally impacted by any future developments in the watershed/vicinity. All property restrictions (e.g. liens or easements) that may affect a proposed mitigation site's viability should be identified. If a restriction affects the mitigation area's viability, it will need to be resolved prior to approval of the permit. A written assessment describing all easements and encumbrances and how they may affect habitat values should be provided to Cooperating Agencies for review and comment. A real estate instrument, management plan, or other long term protection mechanism used for site protection<sup>13</sup> of the applicant-responsible mitigation must be approved by the District Engineer in advance of, or concurrent with, the activity causing the authorized impacts. All easements must be subordinate to the conservation easement. Finally, please clarify if all water rights have been secured for the mitigation property.

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Water Quality Planning Division, Austin.

[http://www.tceq.state.tx.us/assets/public/waterquality/swqm/assess/12twqi/2012\\_guidance.pdf](http://www.tceq.state.tx.us/assets/public/waterquality/swqm/assess/12twqi/2012_guidance.pdf)

<sup>13</sup> See 33 CFR §§ 332.4(c)(4) and 332.7(a)

### Performance Standards

Performance standards are important and must be included as part of the mitigation plan. RGL 2002-2 states that the approved mitigation plan must contain performance standards that will be used to assess whether the project is achieving its objectives<sup>14</sup>. Performance standards should be based on attributes that are objective and verifiable. Ecological performance standards should be based on the best available science that can be measured or assessed in a practicable manner. It is difficult to fully evaluate the proposal for adequacy based on the information provided in the Draft EIS. The performance standards do not speak to the full suite of wetland functions. Performance measures would be determined on percent survival of planted species, diversity, and invasive species criteria, in addition to any score for a conditional/functional assessment that may be approved for use in the Tulsa District COE in the future. The use of reference aquatic resources to establish performance standards will help ensure that those performance standards are reasonably achievable.

### Financial Assurance

The Draft EIS and Mitigation Plan contain very little information regarding long or short-term financial assurances. The EIS should include a long-term management plan for the mitigation site. The plan should identify the party responsible for ownership and all long-term management for the compensatory mitigation project. The plan should include a description of long-term management needs, annual cost estimate for these needs, and identify the funding mechanism that will be used to meet those needs<sup>15</sup>. The long-term financial assurance should be funded through a non-wasting endowment. The endowment should be invested and the interest on the endowment used to fund the management of the Mitigation Site. Any provisions necessary for long-term financing must be addressed in the original permit.

On page 125, the Draft Mitigation Plan states: “Financial instruments between consenting parties would be developed at the time of conveyance.” The financial assurances/instruments should be well developed and included in the Draft EIS for review and comment by the Cooperating Agencies. The financial instruments should be required to provide financial assurances to cover all costs associated with project construction for short-term financial assurance<sup>16</sup>. The short-term financial assurance should contain additional monies to cover any contingencies (e.g. replanting, further manipulation of hydrology). In order to determine the appropriate amount of funds to be established in the short-term financial assurance, the NTMWD should provide an itemization of all project related costs. These items should include but are not limited to: as built plans/survey work, costs of land ownership/control, earthwork, permits, erosion control measures, structures, building materials, plant materials, seeding, planting, fencing, control of invasive species, implementation of adaptive management activities<sup>17</sup>, irrigation, monitoring<sup>18</sup> and reporting including monitoring of hydrology, plants, or other elements related to site condition, fence repair and maintenance, administrative/legal costs, such as those associated with establishment of financial assurance endowments, and the conservation easements. The conditions triggering incremental release of the short term financial assurance

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<sup>14</sup> See also 33 CFR §§ 332.4(c)(9) and 332.5

<sup>15</sup> See 33 CFR §§ 332.4(c)(13) and 332.3(n)

<sup>16</sup> See 33 CFR § 332.3(n)(2)

<sup>17</sup> See 33 CFR §§ 332.4(c)(12) and 332.7(c)

<sup>18</sup> See 33 CFR §§ 332.4(c)(10) and 332.6

should be specified in the permit and would be dependent on factors such as achieving performance standards, risk of failure, expertise of the consultant, and complexity of work<sup>19</sup>.

## **Downstream Impacts**

Section 4.4.3.3 of the Draft EIS states: “Consistent with discussion of the interagency team, the proposed criteria do not include deliberate out-of-bank flows. Channelization and straightening have so thoroughly modified the original hydrologic regime of Bois d’Arc Creek, resulting in channel down cutting and increased erosion, that high pulse flow releases would be counterproductive to maintaining a sound ecological environment. In addition, there would be liability issues associated with deliberate flood releases. For these reasons, TCEQ has stated that the State of Texas will not issue water rights permits with deliberate overbank release requirements.”

These statements are not consistent with the Executive Summary of the Rapid Geomorphic Report, which states that “there are reaches in which new channels are beginning to form within the over-widened channels and the creek is in the process of recovering.” The statement is also not consistent with the Instream Flow Study findings of high aquatic life IBI scores for fish, the 42 fish species collected, 2 intolerant species collected, and numerous woody debris structure noted in Figure 4.1 of the Study. An accounting of the baseline conditions and more information concerning the no-action alternative should be provided in the document. The Draft EIS should explain the inconsistency between good water quality, high aquatic life IBI scores, and the assertion that the creek is not able to support a large variety of aquatic life.

EPA is concerned that the modification of the natural out-of-bank flows that occur on average more than once a year to an average of once every 25 years could result in additional impacts to the aquatic environment. Reduction of hydrology to downstream floodplain terrace wetlands and other aquatic features should be addressed. Such a significant change in hydrology, while potentially providing some benefit such as erosion control, could negatively impact such areas and potentially degrade or eliminate them as WUS. Such impacts should be included in the overall impacts associated with the proposed alternative. Additionally, peak flow events are key to maintaining natural stream morphology, and they provide and sustain critical river functions including sediment transport and maintaining pore spaces in larger substrates that are key to aquatic life functions. A larger flushing flow should be delivered at a more frequent rate than once every 25 years.

The future dam drainage area is the bulk of the creek basin (327 out of 420 square miles, or 78%). The dam, therefore, significantly impacts of the future quantities and patterns of downstream creek flows. Directly downstream of the proposed location of the Lower Bois d’Arc Creek Reservoir dam is the existing Caddo National Grassland and the potential future wetland mitigation site. The Draft EIS discusses the possible benefits from the elimination of downstream flooding post-construction. The Draft EIS should also include a discussion of the potential adverse effects to all downstream resources located in the Bois d’Arc Creek basin from the significant downstream hydrologic changes (e.g. quantity of flows, timing of flows) caused by the project.

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<sup>19</sup> See 33 CFR § 332.3(n)(4)

Please clarify the source of the water to be utilized for the instream flow regime. Is the water to be utilized part of the NTMWD's stated need or is it an additional amount captured for the explicit purpose of mitigating downstream impacts to the aquatic environment? If the purpose of the capture is to provide environmental releases then EPA recommends that a defined amount (acre-feet) be identified for meeting environmental needs annually in both normal and drought years. A third party should then have access to water monitoring data and verify releases. If it is found that the predicted amount of water dedicated to downstream environmental protection is inadequate to protect and maintain a high level aquatic use, additional water should be made available for that purpose.

### Reservoir Releases

The long term operation of the reservoir is controlled by the pending TCEQ Water Permit. The draft Water Permit states that NTMWD "is not required to release stored water, except...to meet the Environmental Flow requirements...." These compulsory requirements for post-construction releases ("Required Releases") will determine creek flows directly downstream of the dam.

The reservoir operator (NTMWD) may select to release flows above the Required Releases minimum. Voluntary flows, however, cannot be relied on for maintaining and sustaining existing and future downstream aquatic resources. Any releases above compulsory amounts is counter to the initial effort to fill the reservoir. After the reservoir is filled, any releases above the mandatory levels will compete with the primary purpose of the Lower Bois d'Arc Creek Reservoir project which is to serve as a raw water supply.

The Base or Subsistence Environmental Flows are intended to function as the daily routine creek flows to sustain and maintain the downstream resources. The Base and Subsistence criteria are in effect, daily 'caps' because the draft Water Permit does not require the reservoir operator to exceed them.

It is difficult to review the potential effect of the Base or Subsistence flows. Therefore, estimates of the total annual flows that were developed during the Draft EIS review are being used as an indicator of the magnitude of the change the Lower Bois d'Arc Creek Reservoir project will cause to the creek flow. The best-case scenario for maximum compulsory annual flows to the downstream resources is 365 consecutive days of reservoir level above 516.4 feet (Normal, non-Subsistence condition) and daily rain in the upper sub-basin sufficient to cause the Inflow to meet or exceed base seasonal criteria. Under this best-case scenario, the total baseline required releases is approximately 3,900 acre-feet per year.

Using the information provided in the Instream Flow Study Report Table 5.4, the existing total base creek flow is about 6,500 acre-feet per year. The existing creek flow estimates from Table 5.4 are derived from modeling rather than monitored creek flow. The Draft EIS does not indicate if the study Report was peer reviewed or if creek flow monitoring data available since the 2009 study effort has been used to verify model results. The best-case scenario for maximum baseline downstream creek flows post-construction will be only about 60% of existing flows.

A similar annual estimate was developed for the combination of both baseline (Base or Subsistence) and purge flows. The best-case total maximum required release, Base and Purge Environmental Flows (no Subsistence flow), is about 13,000 acre-feet per year. Using the Instream Flow Study Report Table 5.4 model results, the existing total base and purge creek flow is about 38,000 acre-feet per year. The NTMWD's own model results indicate the best-case scenario for maximum baseline and purge downstream creek flows post-construction will be only about 40% of existing flows.

The Draft EIS indicates the existing creek flows are sufficient to provide a firm yield estimate of 126,200 acre-feet per year, a maximum yield of 175,000 acre-feet per year, with potential losses from reservoir surface evaporation of approximately 73,500 acre-feet per year<sup>20</sup>, and approximately 13,000 acre-feet per year of Environmental Flows. If not harvested or lost due to the project, the yield and evaporation quantities would have been discharged to the Bois d'Arc Creek. The estimates provide another indicator of the dramatic reduction in annual total creek flows, from existing to post-construction (on average approximately 213,000 to 261,000 acre-feet per year of yield and evaporation and Environmental Flows, versus 13,000 acre-feet per year Environmental Flows in the creek). The Draft EIS needs to discuss the potential adverse effect to all downstream resources located in the Bois d'Arc Creek basin from the significant reduction in downstream creek flows caused by the project.

#### Effluent Flows

The Draft EIS indicates the two Wastewater Treatment Plant (WWTP) effluent flows (Bonham, Honey Grove) will continue to contribute to the creek flows downstream of the dam. The future releases related to the WWTPs effluents (2 cubic feet per second (cfs) average estimate, about 1825 acre-feet per year) cannot be relied on for the long term environmental protection of downstream resources. The Draft EIS states the flows may diminish or terminate in the future. The Draft EIS needs to evaluate the potential adverse impact to downstream resources in the Bois d'Arc Creek basin if the existing WWTP effluents diminish or terminate in the future and the draft Water Permit Environmental Flow requirements remain unchanged from what is currently proposed.

#### Water Permit Accounting Plan

The Accounting Plan is incorporated by reference in the draft Water Permit and included in Appendix F of the Draft EIS. The Accounting Plan establishes how compliance with the Environmental Flow (future Required Releases) requirements will be determined. For example, the Accounting Plan provides a 28-day compliance period for daily Normal Base and Subsistence Environmental Flows. If the total actual releases over 14 days does not satisfy the total required releases for the period, missing flows can be made up in the next 14 day period. A worst case scenario is that on the 28<sup>th</sup> day, almost a month's worth of required daily flows could be released downstream at one time and the reservoir operation could be deemed in compliance with the Water Permit. While counter to the intent of the Environmental Flows, the scenario could occur because sustaining and maintaining downstream resources will be only one of several competing operating factors that will determine actual future Lower Bois d'Arc Creek Reservoir releases. We recommend that the Corps evaluate the potential adverse impact to

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<sup>20</sup> Texas Water Development Board. Web page accessed April 8, 2015. Lake evaporation data for quadrangle 411. <http://midgewater.twdb.texas.gov/evaporation/quadrangle/411/evaporation-tabular.txt>

downstream resources in the Bois d’Arc Creek basin should this Water Permit authorized scenario occur.

The draft Water Permit allows the Accounting Plan to be revised in the future, after Water Permit issuance, subject to TCEQ approval. There is no indication the approval process would include a public notice. We recommend that the Corps evaluate ways to ensure that future Water Permit Accounting Plan revisions do not undermine protection of downstream resources.

## **Instream Flow Report**

### Clarification of Flow Amounts

The Instream Flow Report, at page 111, inaccurately states there are no periods with zero flow. Except for days with significant rainfall (156 cfs), the draft water permit normal base flow requirements are triggered solely by daily “inflow” or upstream creek flow captured by a future gauge. The compulsory amount that has to be released in a day could be zero, if rain in the upstream sub-basin is insufficient. We recommend that the Corps clarify that periods of zero flow can occur.

The Instream Flow Report, at page 110, inaccurately states subsistence flows only occur during extreme drought and never fall below 1 cfs. Reservoir operation for water supply under “Overdraft Operations” (Attachment C to Draft EIS Appendix F) could potentially result in reservoir levels below 516.4 feet and trigger the subsistence environmental flows regime, during non-extreme drought situations. Please supply the correct information in the Report.

The project specific environmental flow requirements should be reconsidered because the report used for their selection inaccurately reflects future reservoir operations authorized by the draft water permit. Please review the draft water permit and Instream Flow Report to make sure all statements support each other. If necessary, provide clarifying information to remedy the inconsistencies.

### Stream Flow Characterization

Existing stream conditions are essential to the selection of project specific environmental flows. The hydrology aspects of the Instream Flow Study are based on modeling rather than monitored existing creek flows. Model results were compared to limited data from the U.S. Geological Survey (USGS) stream gauge at FM 1396 that was available at the time. We recommend that the Corps evaluate the existing baseline stream conditions model used in the Report from which the environmental flows are derived, based on creek monitoring available after the 2009 study effort.

The Instream Flow Report, at page 102, states the Lower Bois d’Arc Creek is an intermittent stream with extended periods of little or no flow. The available monitored flow data at upstream (FM 1396) and downstream (FM 409) USGS gauges does not support the characterization of the Lower Bois d’Arc Creek as having extended periods of little to no flow. The project specific environmental flow requirements should be reconsidered because the report used for their selection may inaccurately reflect existing baseline stream conditions.

The Programmatic Work Plan for Texas Instream Flow Studies<sup>21</sup> (December 19, 2002) outlines the scope and methodology for planning and conducting priority studies and calls for peer review and publication of Instream Flow Study Reports. Information about technical issues raised during the peer review process will help inform the review process of the environmental flow impacts because the Instream Flow Reports are the basis for the project specific environmental flow selection. We recommend that the Corps provide information about the impacts the peer review process had, if any, on the Instream Flow Report.

### Baseline Stream Assessment

Habitat is modeled in the Instream Flow Report in terms of pools, riffles, and connectivity, however no habitat assessment is described. Generally, TCEQ will complete habitat assessments concurrent with each biological sampling event. In the case of a reservoir construction, habitat assessments are important because they explain the biological community and give decision makers a basis of comparison in the future as flow regime is changed and managed. Without a baseline habitat assessment it is difficult to determine future habitat benefits of pulse flows. In order to determine performance of the proposed flow regime, a baseline habitat assessment and future assessments of habitat are recommended. Additionally, EPA would suggest inclusion of habitat assessment as one of the adaptive management monitoring parameters in Section 6.1.

It is unclear from the Instream Flow Report if water quality information for nutrients or total suspended solids (TSS) were collected. Concentrations of Total Nitrogen (TN), Total Phosphorous (TP), and TSS would all likely change once the construction of an impoundment was completed. Understanding the baseline concentrations of these parameters is needed in explaining future changes in the aquatic community. Clarification is needed whether samples for nutrients and TSS were collected. If not, explanation of why the decision was made to not collect this information should be provided.

### **Cumulative Impacts**

#### Future Reservoirs

The cumulative impact from all the planned reservoirs in basins that discharge to the Red River (the Lower Bois d'Arc Reservoir, the Ralph Hall Reservoir, the Ringgold Reservoir, the Parkhouse I Reservoir, the Parkhouse II Reservoir, and the Marvin Nichols Reservoir) should be addressed. All of these reservoirs projects would likely be discharging reduced flows with manipulated pulses. The Red River may be cumulatively impacted further downstream due to other industrial users drawing from the River and its contributing tributaries. Please discuss the cumulative impacts to the Red River from potentially reduced flows.

#### Decline in Bottomland Hardwoods

Chapter 5, Section 5.4.5 cites a decline of bottomland hardwood forests and riparian vegetation from 16 million acres to a current 6 million acres. This loss is attributed to dams/reservoirs and other causes but concludes that with implementation of mitigation the project would not contribute to further net loss. The EPA has concerns that, as indicated in the

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<sup>21</sup> TPWD, TCEQ, TWDB. 2002. Texas Instream Flow Studies: Programmatic Work Plan.  
[http://texaswater.tamu.edu/readings/environmental\\_flows/txinstreamflowworkplan.pdf](http://texaswater.tamu.edu/readings/environmental_flows/txinstreamflowworkplan.pdf)

applicant's mitigation plan, a net physical loss of 650 acres of forested wetlands is proposed to occur.

### Migratory Birds

The Migratory Bird Treaty Act (MBTA) was not significantly discussed in the Draft EIS. Chapter 4 mentioned some species that would benefit from open water habitat created by the proposed action, while other species that favor riparian habitat would be slightly adversely affected. Migratory birds are included in the list of avian species mentioned as frequenting the project area in its current state. There are no measures mentioned in the Draft EIS to limit disturbances to migratory bird species. This includes actions, such as not clearing trees or nesting areas during breeding season, or having a certified biologist conduct surveys immediately prior to vegetation clearing. Please include a more detailed description of measures that will be implemented to protect Migratory Birds.

### Invasive Species

Please discuss in greater detail what methods or operating procedures will be used to prevent zebra mussels from infiltrating the Lower Bois d'Arc Creek Reservoir. The mussels occur in Lake Texoma which is also located in the Red River basin upstream of the Bois d'Arc Creek.

### **Environmental Justice**

Bonham, Texas qualifies as an environmental justice community due to 21%-25% of the population being identified as low-income. In addition, the construction of the proposed project and connected actions could have disproportionate impacts on children in the vicinities of Bonham and Honey Grove due to increased noise levels, air pollution, and increased traffic. EPA recommends the Tulsa District COE develop and implement an outreach strategy to provide information to surrounding communities about the scope of the project and its potential impacts.

### **Air Resources**

Comments and recommendations for air resources are included in Appendix A.

### **General Comments and Clarifications**

1. When describing the data in Table 3-11 it states the data is from the last 3 years. The data is from 2006-2008. Please change the text in this section to state the data is 6-8 years old. EPA recommends obtaining newer data if it is available.
2. In Chapter 2, it is stated that alternative methods of obtaining water from desalinization or piping from other reservoirs would produce a much larger carbon footprint compared to the action alternative. The reference cited in this section is a 2011 Freese and Nichols memo to file that is not provided in the Draft EIS. In addition to this memo, EPA recommends providing a copy, or internet link, to documents cited in the Draft EIS that are used as the basis for a decision or rationale.

3. Please clarify if the Leonard Treatment Plant site has increased in size. Page 2-15 of the Draft EIS states the treatment plant will be 600 acres, but slide #56, of a November 13, 2014 presentation<sup>22</sup>, states 841 acres will be required for the treatment plant.
4. Please clarify how the impacted stream acreages (120 acres perennial and 99 acres intermittent) estimates are calculated.
5. Please clarify if the 5,178 linear feet (0.98 miles) of streams potentially impacted by the associated transmission and treatment activities (Draft EIS page 3-31) are included in the estimates of 120 acres (49.8 linear miles) of existing perennial streams, 99 acres (73.5 miles) of intermittent streams.
6. Please clarify how the results of the Rapid Geomorphic Assessment (RGA) conducted in 2008 on portions of Bois d'Arc Creek, Honey Grove Creek, Sandy Creek, Ward Creek, and Bullard Creek were extrapolated to the other impacted creeks (e.g., Burns Branch, Timber Creek, Pettigrew Branch, Cottonwood Creek, Fox Creek, Allens Creek, Yoakum Creek, Onstott Branch, Thomas Branch, Stillhouse Branch) and unnamed tributaries located on the reservoir site.
7. The scope and description of the LBCR project does not appear to be complete in the Draft EIS. The project does not include the transmission pipelines from the Leonard treatment plant to the existing water supply distribution system. The evaluation of impacts should reflect the complete scope of the project, including the distribution system from the treatment plant to existing facilities.

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<sup>22</sup> Robert McCarthy presentation to the North Central Texas Council of Governments Water Resource Council on November 13, 2014. Slide 56 of "Permitting Lower Bois d'Arc Creek Reservoir".  
[http://www.ntmwd.com/downloads/LBCR/presentations/2014\\_11\\_13\\_Presentation.pdf](http://www.ntmwd.com/downloads/LBCR/presentations/2014_11_13_Presentation.pdf)

## **EPA 309 ENVIRONMENTAL REVIEW PROCESS RATING SYSTEM CRITERIA.**

### **A. Rating the Environmental Impact of the Action.**

**LO (Lack of Objections).** The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

**EC (Environmental Concerns).** The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

**EO (Environmental Objections).** The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

1. Where an action might violate or be inconsistent with achievement or maintenance of a national environmental standard;
2. Where the Federal agency violates its own substantive environmental requirements that relate to EPA's areas of jurisdiction or expertise;
3. Where there is a violation of an EPA policy declaration;
4. Where there are no applicable standards or where applicable standards will not be violated but there is potential for significant environmental degradation that could be corrected by project modification or other feasible alternatives; or
5. Where proceeding with the proposed action would set a precedent for future actions that collectively could result in significant environmental impacts.

**EU (Environmentally Unsatisfactory).** The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions:

1. The potential violation of or inconsistency with a national environmental standard is substantive and/or will occur on a long-term basis;
2. There are no applicable standards but the severity, duration, or geographical scope of the impacts associated with the proposed action warrant special attention; or

3. The potential environmental impacts resulting from the proposed action are of national importance because of the threat to national environmental resources or to environmental policies.

#### **B. Adequacy of the Impact Statement.**

**1 (Adequate).** The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

**2 (Insufficient Information).** The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.

**3 (Inadequate).** The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.

# Appendix A

Air resource comments on the Draft Environmental Impact Statement  
for the  
Lower Bois d'Arc Creek Reservoir

**Air Resource Comments on  
The Draft Environmental Impact Statement  
For the Lower Bois d'Arc Creek Reservoir Project  
Bonham, Texas**

**PM<sub>10</sub> Emissions and Fugitive Dust Control**

EPA believes it is especially important that mitigation measures include the use of best management practices for PM<sub>10</sub> and fugitive dust control (e.g., gravel roads, soil wetting practices, limiting access, traffic and speed reduction). In order to further reduce potential air quality impacts, the responsible parties should develop a detailed Construction Emissions Mitigation Plan (Plan) – perhaps as a specific Appendix to the Draft EIS. The Draft EIS should more fully discuss specific actions including any existing dust ordinances, educational outreach tools, and tools to minimize potential residents' exposure to PM<sub>10</sub>, as applicable.

EPA recommends that, in addition to all applicable local, state, or federal requirements, the following mitigation measures be included (as applicable) in the Plan in order to reduce air quality impacts associated with emissions of NO<sub>x</sub>, CO, CO<sub>2</sub>, PM, SO<sub>2</sub>, and other pollutants from construction-related activities, any planned structural and non-structural activities, and possible future modifications to the roadway system:

***Recommendations:***

- *Construction Emissions Mitigation Plan* – The DEIS should include a draft Construction Emissions Mitigation Plan and ultimately adopt this plan in the Record of Decision. In addition to all applicable local, state, or federal requirements, we recommend the following control measures (Fugitive Dust, Mobile and Stationary Source and Administrative) be included (as applicable) in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter and other pollutants from construction-related activities:
  - Fugitive Dust Source Controls: The DEIS should more fully identify the need for a Fugitive Dust Control Plan to reduce Particulate Matter 10 and Fine Particulate Matter 2.5 emissions during construction and operations. We recommend that the plan include these general commitments:
    - Stabilize heavily used unpaved construction roads with a non-toxic soil stabilizer or soil weighting agent that will not result in loss of vegetation, or increase other environmental impacts.
    - During grading, use water, as necessary, on disturbed areas in construction sites to control visible plumes.
    - Vehicle Speed
      - Limit speeds to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

- Limit speeds to 10 miles per hour or less on unpaved areas within construction sites on un-stabilized (and unpaved) roads.
- Post visible speed limit signs at construction site entrances.
- Inspect and wash construction equipment vehicle tires, as necessary, so they are free of dirt before entering paved roadways, if applicable.
- Provide gravel ramps of at least 20 feet in length at tire washing/cleaning stations, and ensure construction vehicles exit construction sites through treated entrance roadways, unless an alternative route has been approved by appropriate lead agencies, if applicable.
- Use sandbags or equivalent effective measures to prevent run-off to roadways in construction areas adjacent to paved roadways. Ensure consistency with the project's Storm Water Pollution Prevention Plan, if such a plan is required for the project.
- Sweep the first 500 feet of paved roads exiting construction sites, other unpaved roads en route from the construction site, or construction staging areas whenever dirt or runoff from construction activity is visible on paved roads, or at least twice daily (less during periods of precipitation).
- Stabilize disturbed soils (after active construction activities are completed) with a non-toxic soil stabilizer, soil weighting agent, or other approved soil stabilizing method.
- Cover or treat soil storage piles with appropriate dust suppressant compounds and disturbed areas that remain inactive for longer than 10 days. Provide vehicles (used to transport solid bulk material on public roadways and that have potential to cause visible emissions) with covers. Alternatively, sufficiently wet and load materials onto the trucks in a manner to provide at least one foot of freeboard.
- Use wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) where soils are disturbed in construction, access and maintenance routes, and materials stock pile areas. Keep related windbreaks in place until the soil is stabilized or permanently covered with vegetation.

○ Mobile and Stationary Source Controls:

- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal<sup>1</sup> or State Standards. In general, commit to the best available emissions control technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible.
- Where Tier 4 engines are not available, use construction diesel engines with a rating of 50 hp or higher that meet, at a minimum, the Tier 3

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<sup>1</sup> EPA's website for nonroad mobile sources is <http://www.epa.gov/nonroad/>.

California Emission Standards for Off-Road Compression-Ignition Engines, unless such engines are not available.

- Where Tier 3 engine is not available for off-road equipment larger than 100 hp, use a Tier 2 engine, or an engine equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides and diesel particulate matter to no more than Tier 2 levels.
- Consider using electric vehicles, natural gas, biodiesel, or other alternative fuels during construction and operation phases to reduce the project's criteria and greenhouse gas emissions.
- Plan construction scheduling to minimize vehicle trips.
- Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections.
- Maintain and tune engines per manufacturer's specifications to perform at CARB and/or EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.

○ Administrative controls:

- Develop a construction traffic and parking management plan that maintains traffic flow and plan construction to minimize vehicle trips.
- Identify any sensitive receptors in the project area, such as children, elderly, and the infirm, and specify the means by which impacts to these populations will be minimized (e.g. locate construction equipment and staging zones away from sensitive receptors and building air intakes).
- Include provisions for monitoring fugitive dust in the fugitive dust control plan and initiate increased mitigation measures to abate any visible dust plumes.

# Appendix B

Correspondence referenced in the EPA Region 6 Comment Letter

for the

Lower Bois d'Arc Creek Reservoir Draft Environmental Impact Statement



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

DEC 09 2008

Colonel Anthony Funkhouser  
District Engineer  
Tulsa District, U.S. Army Corps of Engineers  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4609

Re: PN SWT-0-14659  
Construction of Water Supply System, North Texas Municipal Water District (NTMWD)

Dear Colonel Funkhouser:

The U.S. Environmental Protection Agency (EPA) has reviewed Public Notice (PN) SWT-0-14659, in regard to an application for a permit for development of a water supply system by Mr. James Parks, Executive Director for the North Texas Municipal Water District. We also reviewed the Environmental Report Supporting an Application for a 404 Permit for Lower Bois d'Arc Creek Reservoir ("Environmental Report"), prepared by Freese and Nichols, Inc., an engineering firm under contract to NTMWD. These comments are provided in accordance with EPA's responsibilities associated with the Clean Water Act (CWA) Section 404 and the National Environmental Policy Act (NEPA).

The Lower Bois d'Arc Creek Reservoir addressed in this PN is included in Region C of the Texas Water Plan of 2007, which was developed under the chairmanship of Mr. James Parks.

EPA has significant concerns regarding the proposed project for a water supply system which involves impounding a free flowing stream and tributaries, construction of a stilling basin, service spillway and emergency spillway, outlet works, water treatment facilities, pump station, and intake structure on the impoundment, a 460 million gallon storage reservoir near Leonard, Texas, a 90-inch pipeline 29 miles in length to transport the raw water to a proposed treatment plant at the City of Leonard, a 66-inch outlet pipeline some 14 or 18 miles (alternate route) extending to Pilot Grove Creek, with the final delivery leg being the creekbed for some 5.4 miles to deliver water into NTMWD's intake structures on Lake Lavon.

The impoundment of Lower Bois d'Arc Creek will utilize some 17,068 acres of land and waters of the U.S., and, while the affected acreage for the transmission facility for the system has not been provided, the PN does state that the preliminary route would intersect 15 potential wetland bodies, 87 streams, and 16 impoundments. The proposed transmission pipeline would extend approximately 46 or 43 miles.

The proposed impoundment of Lower Bois d'Arc Creek would occur in Fannin County, Texas, with the construction of pipelines in Fannin, Hunt and Collin Counties. Construction of the reservoir alone would require approximately 146,689 cubic yards of fill material to be discharged into waters of the U.S., including wetlands. The amount of fill associated with the pipelines and other construction is not provided in the PN.

EPA is concerned with the magnitude of wetlands loss proposed for this project. For the reservoir alone, a 17,068 acre area would be converted. Within that area, 6,180 acres are designated jurisdictional waters of the U.S., with 5,874 acres of wetlands amounting to 34.4% of the jurisdictional waters. Some 4,602 acres of the wetlands to be impacted are bottomland hardwood wetlands and would comprise more than 27% of the total reservoir acreage. The acreage impacted by the transmission pipelines and facilities is not provided but would include waters of the U.S. and wetlands as described above.

The functions of the wetlands which would be lost in the ecosystem are well known and include filtering action for water quality improvement, water storage and release aiding in flood control or in maintenance of natural flow of water, reduction of erosive potential of water, provision for ground water recharge, valuable diversity and biological productivity, and important habitat for wildlife. In this case, the bottomland hardwoods provide habitat for many animal and bird species, including the brown bear which the Fish and Wildlife Service has listed as a threatened species. The free flowing streams would be converted to standing or lacustrine waters. Fisheries would likely be impacted. EPA considers these waters of the U.S. to be aquatic resources of national importance. One hundred percent of the jurisdictional wetlands in the reservoir area would be destroyed. These waters of the U.S. are considered aquatic resources of national importance.

#### *Evaluation of Impacts*

EPA has significant concerns with the proposal to separately permit each pipeline crossing as a "single and complete project" under Nationwide Permit 12. The pipelines are integral to the system described; but for the proposed water reservoir, the pipeline project would not exist. The pipeline crossings do not have "independent utility," as defined in the regulations, since they would not be "constructed absent the construction of other projects in the project area" (i.e., the proposed water reservoir). Therefore, each pipeline crossing cannot be considered a "single and complete project" as defined at 33 CFR 330.2(i). As a result, the environmental effects of the pipeline on waters of the United States must be considered in conjunction with the entire proposed project and included in the 404(b)(1) guidelines analysis.

Moreover, the Environmental Report does not adequately analyze the environmental consequences of the proposed alternative. EPA is particularly concerned with the conclusions in the Report that some of the wetland functions (such as flood flow alteration, sediment stabilization, and nutrient removal) would not be impacted, or would even slightly increase, due to the construction of the reservoir. This conclusion does not accurately characterize the important functions of natural systems.

#### *Alternatives Analysis*

EPA believes that the Environmental Report does not adequately analyze the availability of less environmentally damaging practicable alternatives (LEDPA) in compliance with 40 CFR 230.10(a). The public notice does not include information regarding other

alternatives considered by the applicant, and without reference to the Environmental Report the public cannot adequately evaluate the LEDPA. Full disclosure of the project alternatives considered should be provided in order to determine if the proposed project represents the LEDPA.

It is clear that there are alternatives to a water supply reservoir on Lower Bois d'Arc Creek. The Clean Water Act 404(b)(1) Guidelines, which must be complied with, require alternatives to be developed; NEPA requires alternatives to be analyzed and presented in a manner for the public to be able to make comparisons for themselves.

The Environmental Report does discuss a number of alternatives in addition to the proposed action, however, the analysis is overwhelmingly driven by cost and economic factors and in many cases omits entirely any discussion of the environmental effects of the alternatives. The alternatives analysis needs to more fully consider, balance, and compare the environmental effects of each alternative. Also, in several cases it appears that alternatives are discounted solely based on cost or the need to obtain contracts for buying water. The analysis needs to include more information regarding why such alternatives would not be practicable. Finally, while EPA supports the use of existing plans to help inform the proposed project, the Environmental Report appears to restrict the analysis to alternatives considered in the 2007 Texas State Water Plan. EPA recommends re-evaluating combinations of alternatives that were not considered in the Plan that may result in less damage to the aquatic environment (since the Plan presumably was not developed to meet the LEDPA).

The Environmental Report also reaches many conclusions that other sources of water are not suitable without convincing and technical justification. One example is that use of ground water is dismissed as being a non-renewable resource; however, the Carrizo-Wilcox formation as one example mentioned is very replenishable and is considered renewable. The applicant needs to clearly demonstrate why these other alternatives are not practicable.

Other examples of concerns with conclusions in the noted Report are conclusions of no adverse impact without documentation that would be needed to back-up such claims. For example, in the cultural resources report (Appendix C) there is a statement regarding a high potential for prehistoric and historic resources in the area to be impacted, yet the conclusion indicates there would be no significant impact. The Texas Historical Commission has called for appropriate surveys, as well as complete avoidance of some areas. We note that a plan is required and point out that the public is to be allowed opportunity for input to plans for protection of cultural resources. The information should be included in the draft NEPA document provided to the public and agencies.

### *Secondary and Cumulative Impacts*

The Public Notice and the Environmental Report do not provide sufficient information to make a determination regarding secondary and cumulative effects of the proposed alternative. Additional information is necessary regarding secondary impacts to downstream water quality (p. 5-10). The Environmental Report also emphasizes the benefits of the proposed project due to increased development, especially near-lake housing, and economic growth, but the analysis

disregards the cumulative impacts of such development on the aquatic environment due to the loss of bottomland hardwood wetlands. Such loss is significant with over 600,000 acres of bottomland hardwoods having been lost to the construction of 5,600 reservoirs in Texas by 1987, as reported in the Texas Wetlands Conservation Plan. It is estimated that in Texas, only about 25% of the original bottomlands remain. Cumulative impacts of this proposal on other water resources and the aquatic ecosystem are also omitted from the Report.

### *Threatened and Endangered Species*

In accordance with 230.10(b), no discharge of dredged or fill material shall be permitted if it jeopardizes the continued existence of endangered or threatened species or results in the likelihood of the destruction or adverse modification of a critical habitat under the Endangered Species Act. Since threatened or endangered species and their habitat may be affected by the proposed project, consultation with the FWS is required.

### *Mitigation*

Neither the PN nor the Environmental Report adequately describe how project impacts have been avoided and minimized. While there is limited discussion of potential avoidance and minimization regarding the pipeline system, it is unclear how the applicant has avoided and minimized harm in relation to the proposed reservoir.

EPA also has concerns regarding the lack of a detailed compensatory mitigation plan for this proposed project. The "Conceptual Mitigation Proposal" outlined in the Environmental Report (and referenced in the PN) provides a list of mitigation options that might be pursued, but it is unclear how any of the proposed options would adequately compensate for the loss of critical functions of 4,602 acres of bottomland hardwoods. Since there are no mitigation banks or in-lieu fee programs available in the service area, many of the options appear to emphasize purchasing lands for preservation. However, it is unclear to what extent other restoration or enhancement opportunities might be available, and how the lands targeted for preservation would replace lost functions of bottomland hardwood wetlands.

Pursuant to 33 CFR Part 332.4 and 40 CFR Part 230.94, *Compensatory Mitigation for Losses of Aquatic Resources*, a compensatory mitigation plan must be submitted and approved by the Corps before the District Engineer can issue an Individual Clean Water Act Section 404 permit. This plan must address a number of critical details regarding the mitigation project including: clearly articulated project goals and objectives; project site selection criteria; site protection instruments (e.g., conservation easements); detailed quantitative and qualitative baseline information describing both the impact and compensation sites; a detailed discussion of the mitigation project's credit determination methodology and results; a maintenance plan; ecological performance standards used to evaluate the degree to which the compensation projects are replacing lost functions and area; detailed monitoring requirements; a long-term management plan describing necessary long-term stewardship of the compensation sites and who is responsible for performing this stewardship; an adaptive management plan; and financial assurances to ensure project construction, implementation, and long-term management.

An additional concern is the stated intent that any land purchases made for mitigation lands would essentially be outside of project cost requirements and would only be made if there are willing sellers and buyers. Mitigation costs are part of a project's cost, and we pointed that out in the recent Bayou Meto project in Arkansas. John Paul Woodley, Jr., Assistant Secretary of the Army, included this in his determination to refuse the mitigation proposal because reliance on willing sellers would result in a non-contiguous patchwork of mitigation.

#### *National Environmental Policy Act*

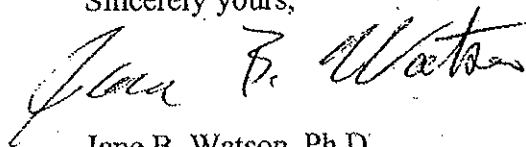
EPA believes that an environmental impact statement prepared by the COE in accordance with the National Environmental Policy Act is necessary in order for the public and agencies to have accurate information, to be able to analyze alternatives, to determine the full extent of impacts of the total project that is proposed and not just a reservoir portion of a water supply system, including the cumulative, indirect and direct impacts. We request that an environmental impact statement be prepared.

#### *Clean Water Act Section 404*

At this time, EPA requests that this permit application be denied because the project may result in substantial and unacceptable impacts on aquatic resources of national importance (pursuant to the Part IV.3 (a) of the 1992 Memorandum of Agreement Between the EPA and the Department of the Army, relative to Section 404(q) of the Clean Water Act, 1992.)

We will be available to work with you to address our concerns. Your full consideration of these comments will be appreciated. Please contact me or have your staff contact Jeanene Peckham at 214-665-6411 for further discussion on this matter.

Sincerely yours,



Jane B. Watson, Ph.D.  
Chief

Ecosystems Protection Branch



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

JAN 5 2009

Colonel Anthony Funkhouser  
District Engineer  
Tulsa District, U.S. Army Corps of Engineers  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74218-4609

Dear Colonel Funkhouser:

This letter is provided as a follow-up to the U.S. Environmental Protection Agency's (EPA) comments dated December 9, 2008, on Public Notice SWT-0-14659 in accordance with Clean Water Act (CWA) 404(q) Memorandum of Agreement Part IV 3(a). The proposal is by Mr. James Parks, Executive Director for the North Texas Municipal Water District (NTMWD) for construction of water supply facilities in Fannin, Hunt and Collin Counties.

The proposal involves construction of a dam on Lower Bois d'Arc Creek for an impoundment on 17,068 acres. Other construction includes a stilling basin, service spillway and emergency spillway, outlet works, pump station, impoundment intake structure, storage reservoir near Leonard, Texas, and pipeline construction a distance of 46 or 43 miles (alternate route) through three counties. The pipeline is described as intersecting 87 streams, 16 impoundments and 15 potential wetland bodies. The reservoir alone would require approximately 146,689 cubic yards of fill placed in waters of the U.S., including wetlands; however an estimate of fill for the pipeline work has not been provided.

EPA is concerned with the magnitude of wetlands loss proposed for this project. Within the 17,068 acres converted for the reservoir, 6,180 acres are designated jurisdictional waters of the U.S., and include 5,874 acres of wetlands, of which 4,602 acres are bottomland hardwood wetlands. The important functions of such wetlands are well known. Again, an estimate of the losses related to the pipeline construction has not been provided.

The functions of the wetlands which would be lost in the ecosystem are well known and include filtering action for water quality improvement, water storage and release aiding in flood control or in maintenance of natural flow of water, reduction of the erosive potential of water, provision for ground water recharge, valuable diversity and biological productivity in this ecosystem, and important habitat for wildlife. One hundred percent of the jurisdictional wetlands in the reservoir area would be destroyed. These designated jurisdictional waters of the U.S. are considered aquatic resources of national importance.

EPA has significant concerns with the proposal to separately permit each pipeline crossing as a "single and complete project" under Nationwide Permit #12. The pipelines are

integral to the system described; but for the proposed reservoir and associated facilities, the pipeline project would not exist. The pipeline crossings do not have "independent utility", as defined in the regulations, since they would not be "constructed absent the construction of other projects in the project area" (e.g., the proposed reservoir). Therefore, the pipeline crossings cannot be considered within the definition for "single and complete project" as defined at 33 CFR 330.2(i). As a result, the pipeline must be considered in conjunction with the entire proposed project, with impacts also evaluated and included within the CWA 404(b)(1) Guidelines Analysis.

The information provided in an Environmental Report prepared by the NTMWD's contracted engineering firm designing the project does not adequately analyze the environmental consequences of the proposed project. For example, the conclusion that some wetland functions would not be impacted does not accurately characterize the important functions of the natural system.

Section 230.10 of the Guidelines prohibits a discharge of fill if a less environmentally damaging practicable alternative (LEDPA) exists or if the nation's waters may be significantly degraded. The Public Notice (PN) did not include information regarding other alternatives that may have been considered. EPA believes that the Environmental Report does not adequately analyze the alternatives that were discussed; the analysis is overwhelmingly driven by cost and economic factors and in many cases does not discuss the environmental effects of the alternatives described. In several cases, it appears that alternatives are discounted solely based on cost or on a need to obtain contracts for buying water. The Environment Report appears to restrict the discussion of alternatives only to those considered in the 2007 Texas Water Plan. EPA recommends re-evaluating combinations of alternatives not considered in the Plan that may result in less damage to the aquatic environment, since the Plan was not developed to meet the LEDPA. Many conclusions are made that other sources of water are not suitable without convincing and technical justification. The applicant needs to clearly analyze and demonstrate the practicability of all alternatives.

The PN and the Environmental Report, which were submitted separately, do not provide sufficient information to make a determination regarding secondary and cumulative effects of the proposed alternative on the environment. For example, additional information is necessary regarding secondary impacts to downstream water quality. The Environmental Report strongly emphasizes benefits of the proposed project due to increased development, especially near-lake housing, and economic growth, but the analysis disregards the cumulative impacts of such development on the aquatic environment due to loss of bottomland hardwood wetlands. Such loss is significant with over 600,000 acres of bottomland hardwoods having been lost to the construction of 5,600 reservoirs in Texas by 1987, as reported in the Texas Wetlands Conservation Plan. Cumulative impacts of this proposal on other water resources and the aquatic ecosystem are also omitted from the Report.

Information has not been provided that describes how the planned project's impacts, including the pipelines, have been avoided and minimized. EPA also has concerns regarding the lack of a detailed compensatory mitigation plan which is required pursuant to 33 CFR 332.4 and 40 CFR 230.94, *Compensatory Mitigation for Losses of Aquatic Resources*. For unavoidable impacts of a project, compensatory mitigation must be provided.

We continue to request that an environmental impact statement be prepared by the COE, in accordance with the National Environmental Policy Act in order for the public and agencies to have accurate information, to be able to analyze and compare alternatives, to determine the full extent of impacts of the total project that is proposed including cumulative, indirect and direct impacts.

In the absence of the information which is noted above and the additional information needs that are discussed in our letter of December 9, 2008, which is attached for your convenient review, I conclude that less damaging alternatives are available. Based on the information currently available, I find the project does not meet the requirements of the Section 404 (b)(1) Guidelines and will have substantial and unacceptable impacts on aquatic resources of national importance pursuant to Part IV.3(b) of the Memorandum of Agreement between the EPA and the Department of the Army regarding the Clean Water Act, Section 404(q), and therefore, the permit should be denied.

We are available to work with you on project evaluation. To discuss this matter further, please contact me or your staff may contact Jeanene Peckham at (214) 665-6411.

Sincerely yours,



Richard E. Greene  
Regional Administrator

Enclosure



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

DEC 15 2010

Colonel Michael J. Teague  
District Engineer  
Tulsa District, U.S. Army Corps of Engineers  
1645 South 101 East Avenue  
Tulsa, OK 74128-4629

ATTN: Mr. David Manning, Mr. Andrew Commer

RE: Lower Bois d'Arc Creek Impoundment Project for North Texas Municipal Water District, Clean Water Act Section 404 Permit Application

Dear Colonel Teague:

The Environmental Protection Agency (EPA) has commented previously in accordance with the Clean Water Act 404(q) Memorandum of Agreement between the EPA and the Department of the Army, Part IV 3(a) and Part IV 3(b), regarding the proposed action. These letters are attached for your convenient review as your tenure had not begun at that time.

EPA called for an Environmental Impact Statement (EIS) to be prepared as appropriate for a project requesting a Clean Water Act, Section 404 permit to authorize filling in waters of the United States, including wetlands. EPA is concerned with the proposed effects to important natural water resources, the water resource use of the magnitude proposed and the magnitude of jurisdictional wetlands being involved, with a large percentage of the wetlands being bottomland hardwood forested wetlands. Wetlands are designated as "special aquatic sites" requiring particular consideration in the Clean Water Act, Section 404 (b)(1) Guidelines. Using only the acreage data included in the Public Notice, the wetlands loss alone proposed in the Lower Bois d'Arc Creek alternative impoundment site, not including pipelines, make up more than 34 percent of the area to be inundated. There are numerous additional concerns, including the need for significant consideration of alternatives to the proposed action that would meet the basic purpose, in order to determine the least environmentally damaging practicable alternative. Since that time, the Corps of Engineers (COE) has made the determination to prepare an EIS, and our agency has participated in the scoping process.

An issue surfaced recently in an interagency meeting held August 13, 2010, that a Habitat Evaluation Procedure (HEP) was the only tool proposed for use to evaluate wetlands impacts. EPA then went on record calling for a separate functional analysis by the COE of all of the wetlands associated with considerations on the application

submitted by the water supplier. EPA is concerned that a robust evaluation of the suite of wetland functions characteristic of the wetland class must be done to address what the Clean Water Act, 404 (b)(1) Guidelines require. Other agencies have described shortcomings of a HEP process for evaluating the wetlands at issue. This letter is to continue to call for a functional assessment of all of the wetlands associated with alternatives to be considered in this review of a CWA, Section 404 permit application.

Since the August meeting, EPA has been in contact regarding this issue with Dr. Charles Klimas of the COE's Engineer Research and Development Center (ERDC) who is associated with the development of A Regional Guidebook for Applying the Hydrogeomorphic (HGM) Approach to the Functional Assessment of Forested Wetlands in Alluvial Valleys of East Texas (HGM - East Texas), as well as A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Forested Wetlands in the West Gulf Coastal Plain Region of Arkansas. He put us in touch with Dr. Hans Williams of Stephen F. Austin University who is the author of the HGM for East Texas. Both have stated to us that either of the two regional approaches named above are believed applicable for use for this proposed impoundment area. The project alternative proposed on the Lower Bois d'Arc Creek is just west of the HGM for the East Texas Region. Some field testing is desirable and could be accomplished relatively quickly. We are assured by both scientists that the HGM - East Texas approach allows for adjustments to be made easily. The ERDC released the HGM - East Texas, in final form, on October 29, 2010. The document number is ERDC/EL TR-10-17 and is available on the ERDC web site.

The EPA Office of Wetlands, Oceans, and Watersheds (OWOW) is aware of the proposed impoundment project and has provided funding and entered into a contract with Dr. Hans Williams of Stephen F. Austin University to carry out a field test of the HGM-East Texas guidebook for use in evaluations of the Lower Bois d' Arc Creek wetlands. The effort is to be initiated December 15, 2010. It has been necessary to move quickly on this matter when funds became available in EPA OWOW, so that EPA could provide assistance on resolution of the issue regarding appropriate analyses of wetland functions to be impacted. Mr. Palmer Hough is the contact at OWOW. We strongly encourage the Tulsa COE to meet with Dr. Williams and contact Mr. Hough with questions. Of course, the Tulsa COE can contact the ERDC for guidance anytime.

In addition, EPA is responding to the email sent by the COE to multiple agencies on October 1, 2010. We also are very concerned with the magnitude of wetland loss proposed in the application under review, which was addressed in our letters of December 9, 2008, and January 5, 2009, mentioned above.

In response to that email, EPA points out that the timing of the Mitigation Rule has no bearing on the point at which the application was submitted by NTMWD. The "Rule" simply stresses the point made for years on the use of functional assessments and mitigation. Please refer to the 2002 RGL and also the 1990 Memorandum of Agreement between the EPA and the Department of Army. For example, the MOA in 1990 called for assessment of functions of wetlands where practicable and where a project was


particularly controversial. In other words, a functional assessment has been advocated for decades, particularly for cases like this.

EPA does not support an approach to use only a HEP to evaluate impacts to wetlands. Also, EPA does not concur that the HEP is an acceptable "other suitable metric" for characterizing anticipated loss impacts in the wetlands of this project.

As we have demonstrated, we are willing to help initiate appropriate wetland function analysis. We look forward to involvement of wetland functional assessment experts. We request your full consideration and resolution of our concerns in the protection of natural resources.

Please contact me with any questions on this matter at 214-665-7275, or have your staff contact Jeanene Peckham at 214-664-6411.

Sincerely yours,

  
for Jane B. Watson, Ph.D  
Associate Director  
Ecosystems Protection Branch

Enclosures

c w/out Enclosures:

David Manning  
Andrew Commer  
Palmer Hough



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, TULSA DISTRICT  
1645 SOUTH 101ST EAST AVENUE  
TULSA, OKLAHOMA 74128-4609

FEB 17 2011

Regulatory Office

RECEIVED  
REGION VI  
2011 MAR 08 PM 1:17  
ECOSYSTEMS PROTECTION BR.

Ms. Jane B. Watson  
Associate Director  
Ecosystems Protection Branch  
Environmental Protection Agency  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Dear Ms. Watson:

This is in reply to your letter dated December 15, 2010, regarding an appeal for functional assessment of the wetland resources that would be adversely impacted by a favorable decision on the North Texas Municipal Water District's permit application for the Lower Bois d'Arc Creek Reservoir (LBCR) project in Fannin County, Texas (Case No. SWT-0-14659).

We will not delay the evaluation of this project for the refinement and adoption of the Regional Guidebook for Applying Hydrogeomorphic (HGM) approach to the Functional Assessment of Forested Wetlands in Alluvial Valleys of East Texas (East Texas HGM) to this region. The primary reasons relate to scheduling and cost. It would not be appropriate to the investment of agency time and resources, the applicant's consulting resources, and the accumulation of baseline data on the project site and mitigation site, to change assessment approaches at this time.

Substantial time and money have been invested by the applicant and reviewing agencies to provide a comprehensive data assemblage to inform the evaluation of this project using the U.S. Fish and Wildlife Service's Habitat Evaluation Procedure (HEP). Additionally, the HEP field work for establishing baseline conditions at the mitigation site has been completed. This information will be used to compare existing conditions to anticipated future conditions to make certain that mitigation efforts to restore wetland hydrology and structure on the site will be sufficient to mitigate for wetland losses.

The referenced East Texas HGM model is not currently approved for use in the region which includes the LBCR project. The Environmental Protection Agency (EPA) has funded a contract to field test the potential applicability of the recently published East Texas HGM. However, the funding level for this contract work will only result in proposed adjustments to reference

condition and metric scaling, not a final usable model. In accordance with the HGM National Action Plan, regional models are to be developed using a multi-agency team to achieve consistent and coordinated results. The procedure to approve its use in a wider region, even without modification, would take substantial time and cause a significant delay in the preparation of the Environmental Impact Statement (EIS) and the evaluation of the project. The multi-agency development effort for the East Texas HGM took 4 years, making adjustments from existing models from adjacent regions. We should expect the standard multi-agency approach to adapt this model to an adjacent region would require comparable time.

Contrary to the suggestion in your letter, the East Texas HGM model assesses forested wetland types only and not all wetland types in the applicable region. Wetland types such as fringe, seep, green-tree, unconnected flats, and beaver induced wetlands (Page 33) are specifically excluded. While forested wetland impacts represent a vast majority of the wetland impacts from the proposed action, other wetland types are present in the reservoir footprint. Thus, even if project review were delayed for the regional adaptation of this model, we still would not be able to assess the "suite of functions of all wetlands", the position expressed in your letter. The model acquiesces to the fact that in some situations, users may need to draw conclusions on effects on excluded systems through other assessment methods. The HGM Guidebook for Arkansas West Gulf Coastal Plain, from which the East Texas HGM was derived, recognizes that in some situations, other assessment methods, HEP specifically mentioned, may provide a more sensitive assessment result. With the investment of agency time to date, it is disappointing to hear that the EPA is withdrawing support for the use of HEP to assess existing conditions at the reservoir site.

This office is committed to a robust evaluation of the potential impacts of the proposed municipal water supply project. The extent of potential wetland losses from this single project is of concern, along with a number of other environmental and social issues. Furthermore, we are committed to require meaningful compensatory mitigation for unavoidable wetland losses, with due consideration of the type of wetlands and functions they currently provide.

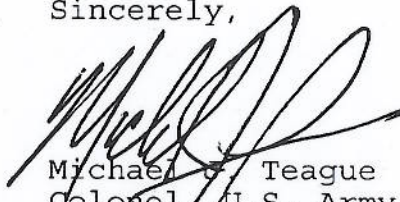
The need to deal meaningfully with these issues prior to our final decision on the application has supported the call for an EIS, as well as extensive research and study by the applicant's consulting team establishing baseline environmental conditions and the availability of alternatives. Parties involved with this

project are well on their way with the preparation of a Draft EIS. It is likely this Draft EIS will be available for review this summer.

With regard to the timing of the submission of the application and the effective date of the Mitigation Rule (33 CFR Part 332), refer to page 19608 of the preamble which states that "applications received prior to the effective date will be processed in accordance with the previous compensatory mitigation guidance". Thus while we will aim to be consistent with Mitigation Rule in the evaluation of this project as much as possible, the operative mitigation guidance for review of this project is Regulatory Guidance Letter 02-02.

I trust this decision will not hamper EPA's continued cooperation in the preparation of the EIS for this project. With regard to future use of functional assessment methods within the Regulatory Program, as program resources allow and consistent with protocol, our staff will gladly partner with EPA and other agencies to develop and adapt suitable functional assessment models, for use in a larger portion of the southern Great Plains than are currently available.

Sincerely,



Michael G. Teague  
Colonel U.S. Army  
District Commander



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733**

**May 4, 2011**

**David A. Manning, Chief  
Tulsa District Regulatory Office  
U.S. Army Corps of Engineers  
1645 S. 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629**

**Dear Mr. Manning:**

**This letter is in response to the U.S. Army Corps of Engineers (Corps) request for the U.S. Environmental Protection Agency (EPA) to be a cooperating agency for the development of a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) for the proposed Lower Bois d'Arc Creek Reservoir (LBCR) project in Fannin County, Texas. The EIS will analyze the impacts of the proposed project to the human and natural environment.**

**EPA agrees to participate in this proposed project as a cooperating agency. As a cooperating agency, EPA will:**

- Provide expertise on NEPA compliance, regulatory issues, and Section 404 issues during EIS planning and development;**
- provide timely technical reviews and comments on preliminary documents, reports, analyses, and sections of the Draft and Final EIS;**
- participate in meetings and provide information as requested by the Corps, as resources allow;**
- provide sources for information or support in the analysis of such information, when known, during preparation of the Draft and Final EIS in areas in which EPA has expertise; and**
- review and comment on the Draft and Final EIS pursuant to our regulatory responsibilities under Section 309 of the Clean Air Act.**

**EPA anticipates that a cooperative team approach will streamline the environmental process and result in a high quality EIS. We look forward to continued involvement and cooperation in the EIS development and Section 404 process for the LBCR project.**

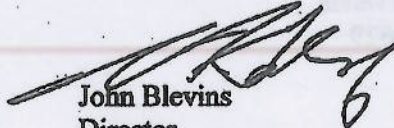
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**Re: Cooperating Agency for the Proposed  
Lower Bois d'Arc Creek Reservoir**

If you have any further questions, please contact Michael Jansky of my staff at  
(214) 665-7451 or [jansky.michael@epa.gov](mailto:jansky.michael@epa.gov).

Sincerely,



**John Blevins  
Director  
Compliance Assurance and  
Enforcement Division**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

August 1, 2014

Mr. Andrew Commer  
Regulatory Chief  
Tulsa District Corps of Engineers  
1645 S 101 E Avenue  
Tulsa, OK 74128-4609

Dear Mr. Commer:

This letter concerns the Lower Bois d'Arc Creek Proposed Reservoir Project, SWT-0-14659, and EPA's role as a cooperating agency. Under this agreement, it is the responsibility of EPA and the Corps of Engineers to work in a cooperative team approach, with the end result being a high quality Environmental Impact Statement (see enclosed May 4, 2011 letter). As you are aware, we are in receipt of a proposal to conduct a Rapid Geomorphic Assessment (RGA) related to the proposed project. We have been afforded no opportunity to review or discuss this document with you or your staff. We received this from another federal agency who, along with EPA and other agencies, have been involved from the early stages of scoping meetings.

In order to be more informed about activities related to the proposed project, this I request the following information be provided to EPA:

- A copy of the RGA Methodology, including Data Sheets
- History of use of this RGA on previous/other projects
- Calibration information. How or if the method has been calibrated to Reference Reaches
- Location information and map of any reference sites
- Copy of the document, Freese and Nichols, 2008, Rapid Geomorphic Assessment of Bois d'Arc Creek Reservoir Project, for the North Texas Municipal Water District.
- In addition to the above request, please provide the HEP Report which may have been prepared on the Riverby Ranch area where some field work was done in 2010.

Please send this information to me at the address above, or by email to [parrish.sharon@epa.gov](mailto:parrish.sharon@epa.gov). If there are other documents associated with this project that would be helpful for EPA to review and provide comment, we look forward to receiving those as well. EPA is not intending to delay the process to complete the draft Environmental Impact Statement. We do want the opportunity to provide technical comments on preliminary documents, reports, analyses and sections of the draft Environmental Impact Statement so that the best possible rating may be achieved.



Your assistance is appreciated.

Sincerely yours,

Sharon Fancy Parrish  
Chief  
Wetlands Section

Enclosure

CC: Jamie Hyslop, Tulsa District, Corps of Engineers  
Sid Puder, US Fish & Wildlife Service  
Tom Heger, Texas Parks and Wildlife Department  
Peter Schaefer, Texas Commission on Environmental Quality



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

**AUG 29 2011**

Colonel Michael J. Teague  
District Engineer  
Tulsa District, U.S. Army Corps of Engineers  
1645 South 101 East Avenue  
Tulsa, OK 74128-4629

RE: Lower Bois d'Arc Creek Impoundment Project for North Texas Municipal Water District, Clean Water Act Section 404 Permit Application SWT-0-14659 and EIS

Dear Colonel Teague:

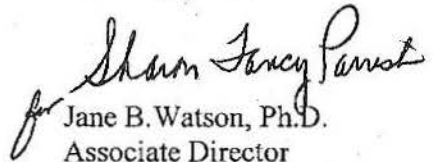
This letter is provided as a follow-up to the U.S. Environmental Protection Agency's (EPA) letter to you dated December 15, 2010, and in response to your letter to EPA which was dated February 17, 2011.

The EPA continues to encourage the Tulsa District Corps of Engineers to utilize a functional assessment of the wetlands that would be impacted by any proposed construction and inundation activities associated with the various alternatives to be considered in the evaluation for the requested Clean Water Act Section 404 permit. To obtain factual information on one method that was discussed in your letter and at interagency sessions, EPA has provided a field test of the Regional Guidebook for Applying the Hydrogeomorphic Approach to the Functional Assessment of Forested Wetlands in Alluvial Valleys of East Texas (HGM-East Texas), which was published by the COE on October 29, 2010. The HGM- East Texas region lies east of the proposed impoundment project and adjacent to Fannin County. A copy of the report by Darinda Dans and Dr. Hans Williams of the Stephen F. Austin State University, titled: Field Testing East Texas HGM Riverine Wetland Functional Assessment Guidebook: Proposed Lower Bois d'Arc Creek Impoundment Project, is enclosed for your review and comment.

The document has been provided to agencies associated with review of the project proposal and environmental impact statement. It was also provided to Dr. Charles Klimas of the USACE ERDC for review and comment. The field test approach and report were favorably received, noting only some typographical errors on labels on figures.

Please provide any comments to me at the above address or 214-665-7275, or to Jeanene Peckham at 214-665-6411.

Sincerely yours,

for Jane B. Watson, Ph.D.

Associate Director  
Ecosystems Protection Branch

Enclosure

cc with enclosure:  
Andrew Commer

cc without enclosure:  
Palmer Hough